

## CLAIMS

1. A heat exchanger assembly for motor vehicles, whereby the air to be heated can be additionally heated by a refrigerant circuit operable as heat pump or short circuit for additional heating, said assembly comprising: a heating heat exchanger in a coolant circuit, a gas cooler/condenser having first heat exchanging surfaces for the additional heating operation and second heat exchanging surfaces for the cooling plant operation of the refrigerant circuit, said first heat exchanging surfaces being integrated into the heating heat exchanger and during additional heating operation the air to be heated is simultaneously heated by said heating heat exchanger and said first heat exchanging surfaces of said cooler/condenser.

2. The assembly of claim 1 wherein in additional heating operation the coolant circuit and the refrigerant are controlled by a controller such that heat exchanger surfaces of the heating heat exchanger and said first heat exchanging surfaces of said gas cooler/condenser/evaporator in additional heating operation have temperature differences of less than 25 K.

3. The assembly of claim 1 wherein said heating heat exchanger includes at least two rows of coolant tubes and said first heating surfaces include at least one row of refrigerant tubes, said coolant tubes and said refrigerant tubes being arranged after each other in direction of the passing air.

4. The assembly of claim 3 wherein said coolant tubes and said refrigerant tubes are arranged next to each other and are parallelly passed by air.

5. The assembly of claim 4 wherein said coolant tubes and refrigerant tubes are arranged alternating next to each other.

6. The assembly of claim 1 further comprising a collector unit having a coolant collector region and a refrigerant collector region, whereby said refrigerant collector region is partly surrounded by said coolant collector region.

7. The assembly of claim 1 further comprising a collector unit having a coolant region and a refrigerant collector region, whereby said refrigerant collector region has no common boundary surface with said coolant region and is arranged thermally separated from said coolant collector region.

8. The assembly of claim 7 wherein alternatingly, partly instead of coolant tubes, refrigerant tubes are arranged comb-like in a row of the heating heat exchanger and the refrigerant collector regions are connected over connection tubes to the refrigerant tubes and because the refrigerant collector regions are arranged outside of the coolant collector region the resulting comb design realizes a good thermal separation of the coolant circuit and the refrigerant circuit.